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RESEARCH LABORATORY**

**Compilation of Technical Papers
Published Under Work Unit 72312501
(71844501) "Acceleration Performance
in Advanced Operational Systems,"
1985-2000**

William B. Albery

AIR FORCE RESEARCH LABORATORY

January 2001

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This technical report has been reviewed and is approved for publication.

FOR THE DIRECTOR

//signed//

F. WESLEY BAUMGARDNER, PhD
Chief, Biodynamics and Protection Division
Air Force Research Laboratory

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14. ABSTRACT This report contains a listing of technical papers, reports, oral presentations, book chapters, abstracts, proceedings papers, and journal articles developed by the engineers and scientists at the Dynamic Environment Simulator centrifuge, in the Biodynamics and Acceleration Branch (AFRL/HEPA), from 1985-2000. The papers are listed by first author and chronologically under ten different categories: Sustained acceleration, human performance, biodynamics models, physiology, robotics, supermaneuverable and agile flight, adaptive controls and force reflection, situational awareness/spatial disorientation, helmet mounted systems, and miscellaneous topics.						
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PREFACE

The Biodynamics and Biocommunications Division (CFB) existed from 1985-1996 until it was reorganized under the structure of the Air Force Research Laboratory in 1997. The purpose of this report is to follow up on a previous biography for the Biodynamics and Bioengineering Division and document those paper products developed by the branches in the CFB division over the 11-year period (1985-1996). This report is a summary from the CFBS branch. The branches involved include:

- CFBA – Biological Acoustics Branch
- CFBE – Impact and Escape Branch
- CFBS – Combined Stress Branch
- CFBV – Vulnerability Assessment Branch

The author would like to thank Marty Luka and Carleen Shumway of Veridian, Inc. who helped assemble and organize the material, as well as the former CFB secretaries who gathered the information from the principal investigators. They include: Merry Spahr, CFBA; Jean Smart, CFBE; Roxanne Baer and Hetty Daugherty, CFBS; and Donna Dodd, CFBV. I should also acknowledge my predecessor, Dr. Robert Van Patten, who was the CFBS Branch Chief from 1985-1989. The author served as chief from 1989-1997 and then as team leader from 1997-2000. Chiefs of the division included: Dr. Henning von Gierke (1985-1989), Mr. Jim Brinkley (1989-1994), and Dr. Thomas Moore (1995-1998), who directed much of the research reports that are listed herein. The reports are listed in alphabetical order by author and they include the general topic area they cover, such as acceleration performance or physiology.

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INTRODUCTION

This report provides a listing of research efforts conducted under Project/Task/Work Unit 72312501 (1985-1995) and 71844501 (1995-2000). The papers, reports, presentations, book chapters, abstracts, and journal articles are listed chronologically under research projects performed on the Dynamic Environment Simulator (DES) centrifuge. The papers and reports are listed under the following research areas:

- Sustained Acceleration
- Human Performance
- Biodynamic Models
- Robotics
- Physiology
- Supermaneuverable and Agile Flight
- Adaptive Controllers and Force Reflection
- Situational Awareness/Spatial Disorientation
- Helmet Mounted Systems
- Miscellaneous Topics

CHRONOLOGY OF RESEARCH EFFORTS ON THE DES 1985-2000

Listed are the research protocols conducted under Work Unit 72312501 and 71844501

1985

- MULTI G VALVE PHASE 1
- DHE – Di-Hydroergotamine and +Gz tolerance
- ELECTRIC G VALVE
- BUTT STRAP G SUIT
- SPACE SICKNESS – Pre Adaptive Training (PAT)
- ECHOCARDIOGRAM AT HIGH G
- BANG-BANG SERVO (BBS) VALVE
- HIGON (human) – High +Gz Onset
- HF/RP VALVE – High Flow Ready Pressure Valve
- O2/CO2 – Mixed Gas Study
- ECHO INFLATION VOLUME
- BANG-BANG SERVO AND HIGH FLOW READY PRESSURE VALVES
- FAILED VALVE EVALUATION FOR LIFE SUPPORT SPO

1986

- ADVANCED G VALVE COMPARISONS
- SEQUENTIALLY INFLATING G SUIT
- SPACE SICKNESS/PAT

1987

- WORKLOAD PERFORMANCE
- SAO2 – Pulse Oximeter Evaluation
- EYE COMPRESSION UNDER G
- EYE BLINK MONITOR EVALUATION
- BELLOFRAM ANTI-G SUIT VALVE EVALUATION
- RHESUS G INDUCED LOSS OF CONSCIOUSNESS (GLOC)
- CREST – Crew Escape Technology Restraint Evaluation
- LOWER BODY NEGATIVE PRESSURE PROTECTION

1988

CERV – Crew Emergency Return Vehicle
SPATIAL DISORIENTATION – G Excess Effect
TRAINING FOR HOLLOWMAN CENTRIFUGE PERSONNEL
TIME ESTIMATION – Performance at High G
CHIX IN SPACE – Shuttle Launch Effects on Chicken Eggs (NASA)

1989

TIME ESTIMATION II
LASER DOPPLER DEVICE EVALUATION
MASS PERCEPTION AT HIGH G
RETROGRADE INFLATION G-SUIT (RIAGS) EVALUATION
GLOC PHARMACOLOGY
MORA – Mandibular Orthopedic Repositioning Appliance Effects on G Tolereance
DYNAMIC RESPONSE TESTING

1990

MORA PHASE II
CHOICE REACTION TIME AT HIGH G
POSITIVE PRESSURE BREATHING SUPPORT
I-NIGHTS NIGHT VISION GOGGLE EVALUATION
TPAT – Tactile Perceived Attitude Transfer
I-NIGHTS II
FORWARD LEAN G PROTECTION (with Northrop)

1991

CHRONIC EFFECTS OF PPB & HIGH G
CLOSED LOOP TRACKING
AGILITY (SUPERMANEUVERABILITY)
TPAT II
TPAT PHASE III
COMBAT EDGE REGULATOR TESTS

1992

ICECS – INTEGRATED CLOSED ENVIRONMENTAL CONTROL SYSTEM
ATLANTIS WARRIOR WATER FILLED G SUIT
SPACE MOTION SICKNESS
BODY POSITION MEASUREMENT AT HIGH G
G SUIT EVALUATION STUDY
NIGHT VISION

1993

JUMPING AT G
VISUALLY PERCEIVED EYE LEVEL (VPEL)
HELMET MOUNTED DISPLAY EVALUATION

1994

AGILITY (SUPERMANEUVERABILITY) EVALUATION
VPEL PHASE II
HELMET MOUNTED DISPLAY EVALUATION
DES CENTRIFUGE HYDROSTATIC BEARING FAILURE, MAY 94

1995

DES OPERATIONAL, SEP 95
WOMEN IN COCKPIT STUDY INITIATED

1996

GENTEX HELMET TESTING
BR C DES DYNAMICS – Biodynamics Research Corporation (SBIR)
CANADIAN PUSH/PULL STUDY (DCIEM)

1997

NVS OPTICAL STABILITY STUDY
WOMEN IN COCKPIT STUDY II
3D AUDIO STUDY
CLARK ATLANTA NECK STUDY - SBIR
WALT DISNEY IMAGINEERING COOPERATIVE RESEARCH
PUSH/PULL WITH PPB
ATAGS FOLLOW-ON TO DWHRP – Defense Women's Health Research Program

1998

HELMET BIODYNAMICS AT HIGH G
SAILSS – Smart Aircrew Integrated Life Support System
COLOR PERCEPTION AT HIGH G
STRAIN-PULL EFFECT ON G TOLERANCE
COLOR DIGITS PERCEPTION
COLOR PERFORMANCE TASK

1999

AGILE FLIGHT I - Effect of $\pm G_x$ on $+G_z$ Tolerance
HIGH G-ONSET
COLOR GY – Effects of $\pm G_y$ on $+G_z$ Tolerance and Color Perception
COLOR PERCEPTION II
ETC CAB IMPULSE TESTING
IOT-Intra-ocular Pressure at High G
COLOR SATURATION

2000

VISOR DEFLECTION ON JOINT HELMET MOUNTED CUEING SYSTEM AT HIGH G
GLOC RECOVERY – Effect of Repeated GLOC on Recovery
GLOC RECOVERY - G-valve tests for Brooks AFB
GLOC RECOVERY PHASE II – Effect of Recovery at ≤ 1 Gz
HELMET BIODYNAMICS – Effect of Helmet Mass, CG on Helmet Pointing Performance

The following papers are listed, chronologically, under ten different categories. At the end of each entry, the type of document is indicated (see this key).

KEY	
TR	Technical Report
A	Abstract
P	Oral Presentation
CP	Proceedings Paper
J	Journal Article
RJ	Refereed Journal Article
BC	Book Chapter
TN	Technical Note

SUSTAINED ACCELERATION

Jennings, T. (1985 Mar) *The Effect of Anti-Ballooning G-Suit and Buttstrap on G-Tolerance*, AFAMRL-TR-85-027. (TR)

Van Patten, R.E. (1985 Mar) *Development of a Bang-Bang Servo Anti-G Valve for High Performance Fighter Aircraft*, DTIC No. AD-B092168, AFAMRL-TR-85-024. (TR)

Albery, W. (1985 Apr) *Simulation of High +Gz Onset in the Dynamic Environment Simulator*, AFAMRL-TR-85-030. DTIC No. AD-A155963. (TR)

Van Patten, R.E. (1985 May) *Validation of an Advanced Servo Anti-G Valve by Human Testing Under High Onset, High Sustained +Gz Acceleration*, Aerospace Medical Association Meeting, San Antonio TX. (A,P)

Jennings, T. (1985 May) *The Effect of Oxygen and Carbon-Dioxide on the Cardiovascular System and the Ischemic Tolerance Interval During +Gz Acceleration*, AFAMRL-TR-85-041. (TR)

Frazier, J. (1985 Aug) *Evaluation of an Electro-Pneumatic Anti-G Valve in a High Onset Rate Acceleration Environment*, DTIC No. AD-B095438, AAMRL-TR-85-051. (TR)

Van Patten, R.E. (1985 Oct) *Human Factors and Performance Issues in the Design of High Performance Fighter Aircraft Cockpits*, Proceedings of the International Conference on Aviation Physiology, Environmental Tectonics Corporation. (CP,P)

Van Patten, R.E. (1985 Dec) *Current Research on Advanced Concept Anti-G Suits*, Survival and Flight Equipment (SAFE) Association Annual Symposium, Las Vegas NV. (CP,P)

Van Patten, R.E. (1985) *Development of an Electro-Pneumatic Anti G-Valve for High Performance Fighter Aircraft*, SAFE Journal, Vol. 15, No. 4, pp 10-14. (J)

Seaworth, J. (1985) *Effect of +Gz Acceleration on Cardiac Volumes Determined by Two-Dimensional Echocardiography*, SAFE Journal, Vol. 15, No. 4, pp 4-9. (J,P)

Jennings, T. (1985 Mar) *The Effect of Anti-Ballooning G-Suit and Buttstrap on G-Tolerance*. Air Force Aerospace Medical Research Laboratory AFAMRL-TR-85-027. (TR)

Frazier, J.W. (1986 Apr) *A Comparative Study of Two Anti-G Suit/Valve Combinations on Human Gz Tolerance*, DTIC No. AD-B102-353, AAMRL-TR-86-017. (TR)

Van Patten, R.E. (1986 May) *A Methodology for the Reduction of False Alarm Rates in Artificial Intelligence-based Loss of Consciousness Monitoring Systems*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Van Patten, R.E. (1986 May) *Advances in Anti-G Valve Technology: What's in the Future?* Aerospace Medical Association Science and Technology Committee Symposium on G Induced Loss of Consciousness, Nashville TN. DTIC No. AD-A198-572. (A,P)

Van Patten, R.E. (1986 Oct) *Effects of Sustained +Gz on Biodynamics, Physiology and Pilot Performance: A Rationale for Performance Metrics*, Proceedings of the International Congress of Aviation and Space Medicine, Belgrade, Yugoslavia. (CP,P)

Albery, W.B. (1986 Dec) *Human Tolerance Enhancement in High Onset Rate, High Sustained +Gz with a Pulsating Servo Anti-G Valve*, SAFE Association Annual Symposium, San Antonio TX, SAFE Journal, Spring 1987. (CP,P)

Van Patten, R.E. (1986 Dec) *Current Research on Artificial Intelligence-based Loss of Consciousness Monitoring System for Advanced Fighter Aircraft*, SAFE Association Annual Symposium, San Antonio TX. Also in Proceedings of the 1987 NAECON Conference, Dayton OH. (CP,P)

Albery, W.B. (1986) *Manual Control of a Peripheral Vision Light Bar in Sustained Acceleration Research*, Annual Conference on Manual Control, Dayton OH. AFWAL-TR-86-3093. (TR)

Cot'e, R. (1986) *Effect of Inspiratory Volume on Intrathoracic Pressure Generated by an L-1 Maneuver*, Aviation, Space, and Environmental Medicine, Vol. 57, No. 11, pp 1035-1038. (RJ)

Jennings, T. (1986) *The Effect of Various Anti-shock Trouser Inflation Sequences on Hemodynamics in Normovolemic Subjects*, Annals of Emergency Medicine, Vol. 50, No. 11, pp 526-532. (RJ)

Jennings, T. (1986) *The Effects of Inflation of Anti-shock Trousers on Hemodynamics in Normovolemic Subjects*, Journal of Trauma, Vol. 26, No. 6, pp 544-548. (RJ)

Van Patten, R.E. (1986) *G's and the Aerobatic Pilot*, Sport Aerobatics, Vol. 11, No. 3, pp 331-375. (J)

Jennings, T. (1986) *The Effect of Di-Hydroergotamine on +Gz Acceleration Tolerance*, Cardiovascular Research, Vol. 20, pp 389-392. (RJ)

Williams, C.A. (1986) *The Relationship Between Changes in Arterial Pressure, Esophageal Pressure and the EMG of Various Muscle Groups During the L-1 Straining Maneuver at Different Spine-to-Thigh Angles*, AAMRL-TR-87-049. (TR)

Frazier, J.W. (1987 Mar) *A Comparison of Tracking Performance During Gy Stress Between Test Pilots and Panel Subjects*, AAMRL-TR-87-018. (TR)

Von Gierke, H.E. (1987 Apr) *Fighter Design for Human Load Limits*, In: North Atlantic Treaty Organization, Advisory Group for Aerospace Research and Development (AGARD) Meeting, Madrid, Spain. AGARD Report No. 746. DTIC No. AD-B005-763. (CP,P)

Albery, W.B. (1987 May) *Advanced Protection Concepts for the High +Gz Onset, High Sustained +Gz Flight Environment*, Aerospace Medical Association Meeting, Las Vegas NV. (A,P)

Frazier, J.W. (1987 May) *Initial Centrifuge Tests of a Subject Controllable Anti-G Valve*, Aerospace Medical Association Meeting, Las Vegas NV. (A,P)

Stepaniak, P.C. (1987 May) *Physiologic Signs During Loss of Consciousness in +Gz Acceleration*, Aerospace Medical Association Meeting, Las Vegas NV. (A,P)

Albery, W.B. (1987 May) *In-Flight Recovery from G-Induced Loss of Consciousness - The Other Side of the Problem*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

O'Brien, P.M. (1987 Nov) *Crew Escape Technologies Initial Centrifuge Test*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

O'Brien, P.M. (1987 Nov) *Eyeblink Monitoring as a Means of Measuring Pilot Physiological State*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Tripp, L. (1987 Nov) *Development of an Oxygen Mask Integrated Arterial Oxygen Saturation Monitoring System for Pilot Protection in Advanced Fighter Aircraft*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Van Patten, R.E. (1987 Nov) *An Alternative Approach to High-G Protection*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Campelli, C.A. (1987) *A Comparison of the Centrifuge and Flight Tests of New Concept Anti-G Valves*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Williams, C.A. (1987 Oct) *Effect of Different Body Postures on the Pressures Generated During an L-1 Maneuver*, Aviation, Space, and Environmental Medicine, Section A, file 59, pp 920-927. (RJ)

Frazier, J.W. (1988 Mar) *Body Displacement Measured During Sustained +Gz, -Gz, and +/-Gy Acceleration Using a Stereoscopic Photographic System*, AAMRL-TR-88-015. (TR)

Van Patten, R.E. (1988 Mar) *Boundaries of a Decision Space for an Artificial Intelligence-based Pilot Loss of Consciousness Monitoring System (LOCOMS) Using Human Centrifuge and Air Combat Maneuvering Range Data*, AAMRL-TR-87-080. (TR)

Tripp, L. (1988 May) *Development of an Oxygen Mask Integrated G-induced Loss of Consciousness Monitoring System*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton, OH. (A,P)

Frazier, J.W. (1988 May) *Anti-G Suit Pressure - How Much is Just Right?* National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Tripp, L. (1988 May) *Development of a Reliable, Non-Intrusive G-Induced Loss of Consciousness Monitoring Device*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Van Patten, R.E. (1988 May) *Flight Test of a Rate Sensitive Anti-G Environment*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Van Patten, R.E. (1988 May) *Research and Development History: Aircrew Monitoring and Pilot Loss of Consciousness Monitoring*, Automatic Flight Path Recovery Panel Meeting, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Van Patten, R.E. (1988 May) *A Methodology for the Reduction of False Alarm Rates in Artificial Intelligence-Based Loss of Consciousness Monitoring Systems*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Mawhinney, D. (1988 May) *Flight Helmet Instrumented with Multiple Arterial Pulse Sensors*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Cooper, J.R. (1988 May) *The Use of Positron Emission Tomography (PET) and Magnetic Resonance Imaging (MRI) in the Measurement of Cerebral Structural, Vascular and Metabolic Changes Following G-induced Loss of Consciousness in the Rhesus Monkey*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton, OH. (CP,P)

Tripp, L.D. (1988 Nov) *The Effects of Various Amounts of Lower Body Negative Pressure on the Physiological Effects Induced by -Gz Acceleration*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Tripp, L. (1988 Dec) *The Effect of Various Amounts of Lower Body Negative Pressure on the Physiological Effects Induced by Head-Down Tilt*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Van Patten, R.E. (1988 Dec) *Anti-G Suit Inflation Rates: An Historical Overview*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Van Patten, R.E. (1988 Dec) *Human Centrifuge Onset Rates*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Chiou, W. (1988) *A Stress Test to Evaluate the Physical Capacity of Performing L-1 Anti-G Straining Maneuvers*, AAMRL-TR-88-047. (TR)

Beck, B. (1989 April) *The Use of Lower Body Negative Pressure as a Counter Measure to Negative Gz Acceleration*, AAMRL-TR-89-025. (TR)

Tripp, L.D. (1989 May) *The Use of Lower Body Negative Pressure as a Means of -Gz Protection*, Aerospace Medical Association Meeting, Washington DC. (A,P)

Cooper, J. (1989 May) *The Use of Positron Emission Tomography (PET) in the Measurement of Cerebral Vascular & Metabolic Changes Following G-induced Loss of Consciousness in the Rhesus Monkey*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Frazier, J.W. (1989 May) *Centrifuge Testing of Restraint Harnesses for the Crew Escape Technologies Program*, Aerospace Medical Association Meeting. (A,P)

Tripp, L.D. (1989 May) *The Use of Lower Body Negative Pressure as a Means of -Gz Protection*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Tripp, L.D. (1989 May) *The Effect of an Anti-Ballooning Anti-G Suit and Buttstrap G-Suit on G Tolerance*, Proceedings of the National Aerospace Electronics Conference (NAECON), Dayton OH. (CP,P)

Albery, W. (1989 May) *Positron Emission Tomography (PET) in the Study of G-induced Loss of Consciousness (G-LOC)*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Chelette, T.L. (1989 May) *Pilot Acceleration Training in the Egyptian Air Force*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

O'Brien, P.M. (1989 May) *Crew Escape Technologies Initial Centrifuge Tests*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Albery, W.B. (1989 May) *Cerebrovascular Effects of G-induced Loss of Consciousness in Primates*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Tripp, L.D. (1989 Oct) *The Use of Biomedical Instrumentation in Human Centrifuge Experimentation*, IEEE-Dayton Chapter, Dayton OH. (A,P)

Jennings, T. (1989 Nov) *The Effect of Various Straining Maneuvers on Cardiac Volumes at +1 Gz*, Proceedings of the SAFE Association Symposium, New Orleans LA. (CP,P)

Skowronski, V.D. (1989 Nov) *A Motion Activated Articulating Seat (MAAS): A Dynamic Concept for Cockpit Seat Design in High Performance Aircraft*, Proceedings of the SAFE Symposium, New Orleans LA. (CP,P)

Tripp, L.D. (1989 Nov) *The Effects of Various Amounts of Lower Body Negative Pressure on the Physiological Effects Induced by Head-Down Tilt*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

Williams, C.A. (1989 Apr) *The Effects of Combined L-1 Maneuvers and Fatiguing Isometric Contractions on Acceleration Tolerance*, Aviation, Space, and Environmental Medicine, Vol. 59, No. 6, pp 656-660. (RJ)

Tripp, L.D. (1989) *The Effect of Various Straining Maneuvers on Cardiac Volumes at 1 G and During +Gz Acceleration*, AAMRL-TR-89-011. (TR)

Albery, W. (1990 Apr) *Current Status of an Artificial Intelligence Based Loss of Consciousness Monitoring System for Advanced Fighter Aircraft*, AGARD Aerospace Medical Panel Symposium, Tours, France, DTIC No. AD-A231148. (CP,P)

Chelette, T.L. (1990 May) *Masseter EMG as a Measure of Bite Block Use Under Various Gz Levels*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Albery, W. (1990 May) *Development of a Gravity-Induced Loss of Consciousness (GLOC) Monitoring System*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Albery, W. (1990 May) *Simulating High G in the Dynamic Environment Simulator*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Chelette, T. (1990 May) *Effects on G Tolerance While Biting Down on a Mandibular Orthopedic Repositioning Appliance (MORA)*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Beck, B.G. (1990 May) *Use of Echocardiography to Evaluate the Effects of Lower Body Negative Pressure as a Countermeasure to Negative Gz*, Aerospace Medical Association Meeting, New Orleans LA. (A,P)

Tripp, L.D. (1990 May) *Cerebral Blood Flow During +Gz Acceleration as Measured by Transcranial Doppler*, Meeting of the American College of Clinical Pharmacology, Houston TX. (CP,P)

Van Patten, R.E. (1990 May) *Current Human Factors in the Cockpit*, International Conference Sponsored by the Aeromedical and Training Institute Division of the Environmental Tectonics Corporation. (CP,P)

Chelette, T. (1990 Oct) *Effects on G Tolerance While Biting Down on a Mandibular Orthopedic Repositioning Appliance (MORA)*, AAMRL-TR-90-087. (TR)

McCloskey, K. (1990 Oct) *Subjective Responses To Assisted Positive Pressure Breathing (APPB) As A Means of High-G Protection*, Proceedings of Human Factors Society Meeting, Orlando FL. (CP,P)

McCloskey, K. (1990 Oct) *Subjective Responses to Positive Pressure Breathing Under Sustained High-G Using the COMBAT EDGE System*, AAMRL-TR-90-056. (TR)

- Tripp, L.D.** (1990 Dec) *COMBAT EDGE: A Test Subject's Perspective*, Proceedings of the SAFE Association Symposium, San Antonio TX. (CP,P)
- Skowronski, V.D.** (1990) *A Motion Activated Articulating Seat (MAAS): A Dynamic Concept for Cockpit Seat Design in High Performance Aircraft*, AL-SR-1990-508. DTIC No. AD-A231698. (TR)
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Jacobson, J. (1985 Jul) *Effect of Thyrotropin Releasing Hormone on Human Reaction Time and Decision Time*, Clinical Research, Vol. 10, No. 3, pp 115-120. (RJ)

Seaworth, J.F. (1985 Oct) *Hemodynamic Effects of Anti-G Suit Inflation in a 1 G Environment*, Journal of Applied Physiology, Vol. 59, pp 1145-1151. (RJ)

Jennings, T. (1985) *The Effect of Body Inversion on Hemodynamics Determined by Two-Dimensional Echocardiography*, Critical Care Medicine, Vol. 13, No. 9, pp 760-762. (RJ)

Shriver, T.G. (1986 Jan) *The Effect of Breathing Elevated CO₂ Gas Mixtures on Tracking Performance, Blood Pressure, and Subjective Tolerance at 1 Gz*, AAMRL-TR-86-006. (TR)

Williams, C.A. (1986 Oct) *Changes in Esophageal and Arterial Blood Pressure During L-1 Straining Maneuvers and Fatiguing Isometric Contractions*, American Physiological Society, New Orleans LA. (CP,P)

Mawhinney, D.D. (1987 May) *A Miniaturized Microwave Sensor for Monitoring the Superficial Temporal Arterial Pulse*, Proceedings of the NAECON, Dayton OH. (CP,P)

Augustine, L. (1994 May) *An Inflight Comparison of Reflectance vs Transcutaneous Pulse Oximetry Oxsensors During Patient Helicopter Transport*, Aerospace Medical Association Meeting, San Antonio TX. (A,P)

Arnold, A. (1995 May) *Performance Effects of Decreased Cerebral Tissue Oxygen Saturation Induced by Various Levels of Mixed Oxygen/Nitrogen*, Aerospace Medical Association Meeting, Anaheim CA. (A,P)

Tripp, L.D. (1995 May) *Cerebral Blood Flow Dynamics During Flight Simulation as Measured by Transcranial Doppler*, Aerospace Medical Association Meeting, Anaheim CA. (A,P)

Tripp, L.D. (1995 May) *Psychophysiological Effects of Graded Hypoxia as Measured by Cerebral Oximetry and Evoked Potentials*, International Symposium on Aviation Psychology, Columbus OH. (CP,P)

Arnold, A. (1995) *Human Performance Effects of Decreased Cerebral Tissue Oxygen Saturation Induced by Various Levels of Mixed Oxygen/Nitrogen*, AL/CF-TR-1995-0039. (TR)

Sides, M.B. (1996 May) *C-130 In-flight Monitoring of Arterial Oxygen Saturation During Aeromedical Evacuation Training Missions*, Aerospace Medical Association Meeting, Atlanta GA. (A,P)

Tripp, L.D. (1998 May) *The Function and Use of Cerebral Oximetry: An Overview*, Aerospace Medical Association Meeting, Seattle WA. (A,P)

ROBOTICS

Repperger, D.W. (1990 Jun) *Determination of a Simulator's Capability Using Work Volume*, Proceedings of the American Control Conference, Boston MA. (CP,P)

Repperger, D.W. (1990 Aug) *Use of a Multi-Axis Fitts' Law Paradigm To Characterize Total Body Motion- A Study in Teleoperation*, Proceedings of the IEEE International Conference on Systems Engineering, Chicago IL. (CP,P)

Remis, S.J. (1990 Dec) *Quantifying Performance Degradation Due to the Human-Machine Interface of Telemanipulators*, AAMRL-SR-90-510. (TR)

Repperger, D.W. (1993 Mar) *A Robotics Perspective on the Simulation of Motion Fields for Agile Aircraft*, Seminars at Troy NY, Detroit MI, and Newark NJ. (CP,P)

Roberts, R.G. (1993 May) *The Dynamic Environment Simulator as a Robotic System: Kinematic Issues*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Repperger, D.W. (1993) *The Application of Kinematic and Dynamic Principles from Manipulators to Help Analyze and Control a Motion Simulator*, IEEE Control Systems Magazine, Vol. 19, No. 4, pp 160-166. (RJ)

Repperger, D.W. (1993) *The Application of Force Feedback Control Schemes from Studies on Robotic Systems to Analyze a Teleoperation System Involving Humans*, Conference on Control Application, Vancouver, British Columbia, Canada, also presented at the New Jersey Institute of Technology, Newark NJ. (CP,P)

Roberts, R.G. (1994 May) *The Kinematics of Robotic Wrists*, IEEE Transactions on Robotics and Automation, The IEEE Conference on Robotics and Automation, San Diego CA. (CP,P)

Repperger, D.W. (1994 Jun) *Dynamic Controller Design for a Fixed Base Motion Simulator*, Proceedings of the American Control Conference, Baltimore MD. (CP,P)

Repperger, D.W. (1994 Oct) *Controller Studies For Dexterous Hand Manipulation*, AL/CF-TR-1994-0163. (TR)

Chen, Y.C. (1995 Jun) *A Study of the Kinematics, Dynamics, and Control Algorithms for a Centrifuge Motion Simulator*, Proceedings of the American Control Conference, Seattle WA. (CP,P)

Repperger, D.W. (1995 Oct) *Objective Measures of Machine Intelligence Based on a Human-Interface Analogy*, Proceedings of the International Conference on Systems, Man, and Cybernetics, Vancouver, Canada. (CP,P)

Repperger, D.W. (1995 Dec) *On The Reduction of 'Workless Forces' In Mechanical Systems Using Concepts From LQ Theory*, IEEE Conference on Decision and Control, Boston MA. (CP,P)

Repperger, D.W. (1995 Dec) *Inverse Kinematic Control Algorithms with a Reduced Coriolis Component for Use in Motion Simulators*, Transactions of the ASME, Journal of Dynamic Systems, Measurement, and Control, Vol. 117, No. 18, pp 570-577. (RJ)

Phillips, C. (1997 May) *A Human Operator Describing Function Model for a Manual Control (Unit Step) Task*, Aerospace Medical Association Meeting, Chicago IL. (A,P)

SUPERMANEUVERABLE & AGILE FLIGHT

Van Patten, R.E. (1987 May) *Non-linear Anti-G Protection*, Aerospace Medical Association Meeting, Las Vegas NV. (A,P)

Van Patten, R.E. (1987 May) *Human Factors Aspects of Advanced and Unconventional Flight Maneuvering Accelerations*, Aeromedical Training Institute Symposium, South Hampton PA. (CP,P)

Repperger, D. (1991 May) *Open and Closed Loop Motion Field Simulation of Supermaneuvers on a Three Axis Centrifuge*, Aerospace Medical Association Meeting, Cincinnati OH. (A,P)

Repperger, D.W. (1991 May) *Methodology For Motion Base Simulation of Closed Loop Supermaneuvers on a Centrifuge Simulator*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (A,P)

Repperger, D.W. (1991 Jun) *Matrix Continued Fraction Algorithms For Inverse Kinematics/Dynamics with Application to Simulation of Supermaneuverable Trajectories on Centrifuges*, Proceedings of the American Control Conference, Boston MA. (CP,P)

Repperger, D.W. (1992 Apr) *Potential Human Factors Effects Due to High Alpha Flight*, Proceedings of the SAE Aerospace Atlantic Conference, Chicago IL. (CP,P)

Repperger, D.W. (1992 Jun) *A Study of Supermaneuverable Flight Trajectories Through Motion Field Simulation of a Centrifuge Simulator*, Transactions of the ASME: Journal of Dynamic Systems, Measurement, and Control, Vol. 114, pp 270-277. (RJ)

Repperger, D.W. (1993 May) *Aerospace Robotics in Supermaneuverable Flight-Defining the Set of Attainable Motion Fields in Existing Aircraft and Motion Simulators*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Repperger, D.W. (1993 Jul) *Agile Flight in the Dynamic Acceleration Environment*, Interface/Industry Acceleration Colloquium, Fairborn OH. (P)

Repperger, D.W. (1995 Mar) *Dynamic Scaling of One-Seventh Size F-15 Prototypes For Agile Flight Simulation*, AL/CF-TR-1995-0028, DTIC No. A295057. (TR)

Repperger, D.W. (1995 Apr) *Coriolis Study of the Dynamic Environment Simulator*, AL/CF-TR-1995-0043, DTIC No. A299190. (TR)

Lyons, T. (1998 May) *Human Factors Implications of Superagile Flight: NATO Research and Technology Organization (RTO (formerly AGARD)) AMP Working Group #27*, Aerospace Medical Association Meeting, Houston TX. (A,P)

Lyons, T. (1998 May/Jun) *Human Factors Implications of Superagile Flight: NATO Research and Technology Organization (RTO) (formerly AGARD) AMP Working Group #27*, Aerospace Medical Association Meeting, Houston TX. (P)

Albery, W. (2000) *The Vestibular Organs and Spatial Disorientation*, Lecture presented at the Flight & Ground Simulation Technology Conference, Binghamton University, Binghamton NY, Jan 2000. (P)

Albery, W. (2000) *Simulation*, Report Chapter for RTO Lecture Series on Human Factors Implications at Super Agile Flight, NATO AGARD, Paris FR. (BC)

Albery, W. (2000) *Physiological Consequences: Cardiopulmonary Vestibular, Neuromuscular and Sensory Aspects*, Report Chapter for RTO Lecture Series, NATO AGARD, Paris France. (BC)

Albery, W. (1999) *Human Consequences of Superagile Flight*, Proceedings of the 5th International Symposium on New Aviation Technologies, Zhukovsky, Russia. (CP,P)

Lyons, T. (2000 Mar) *Human Consequences of Agile Aircraft*, NATO RTO Lecture Series 220. (CP, P)

Albery, W. (2000 Apr) *Human Consequences of Flight*, SAFE Journal, Vol. 30(1), 156-164. (RJ)

ADAPTIVE CONTROLLERS & FORCE REFLECTION

Repperger, D.W. (1985 Feb) *An Application of Optimization Methods to Evaluate Conditioning Intervals*, AFAMRL-TR-85-011. (TR)

Repperger, D.W. (1985) *An Application of Optimization Methods to Evaluate Conditioning Intervals*, Journal of Biomechanical Engineering, Vol. 107, pp 57-61. (RJ)

Morris, A. (1986 Apr) *Relating Performance Changes of Man-Machine Interaction to Muscle Activity Using a Microprocessor Based Assistive Controller*, Aerospace Medical Association Meeting, Nashville TN. (A,P)

Morris, A. (1986 May) *Adaptability of Muscle Function with the Use of Computer Aided Assistive Devices*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton, OH. (CP,P)

Repperger, D.W. (1986 May) *Active Controllers and the Time Duration to Learn a Task*, Proceedings of the Annual Conference on Manual Control, Dayton OH. (CP,P)

Morris, A. (1986 May) *Describing Functions of the Man-Machine with an Active Controller*, Proceedings of the Annual Conference on Manual Control, Dayton OH. (A)

Repperger, D.W. (1986 Sep) *Investigation of Adaptive Control Structures with Application to Manipulator Arms*, Proceedings of the International Conference on Systems Engineering, Dayton OH. (CP,P)

Repperger, D.W. (1986 Dec) *The Application of Adaptive Control Theory to Man-Machine Systems*, IASTED International Congress on Applied Control and Identification, Chicago IL. (CP,P)

Morris, A. (1987 May) *Performance and Equivalent EMG's from a Unilateral Stick Experiment*, Aerospace Medical Association Meeting, Las Vegas NV. (A,P)

Repperger, D.W. (1987 May) *Dual Proprioception Obtained Through Assistive Controllers*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Morris, A. (1987 Sep) *Analysis of Different Agonist and Antagonist EMG Signals Using Simple System Models*, International Conference on System Engineering, Dayton OH. (A,P)

- Barazanji, K.** (1988 May) *Design and Analysis of a Closed Loop Controller for an Anti-G Suit*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)
- Morris, A.** (1988 May) *Discriminant Analysis of Changes in Human Muscle Function When Interacting with an Assistive Aid*, IEEE Transactions on Biomedical Engineering, Vol. 35, No. 5, pp 316-322. (RJ)
- Solanki, R.** (1988 Jun) *A Kinematic Study of a Robot and a Dexterous Hand*, International Conference on CAD/CAM, Robotics, and Factories of the Future, Detroit MI. (CP,P)
- Cozzone, A.** (1989 May) *Information Theory Analysis of Human Tracking Performance Using the Smart Stick Controller*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)
- Repperger, D.W.** (1989 Jun) *Control Strategies with Application to Limb Prostheses*, Automedica, pp 123-143. (RJ)
- Repperger, D.W.** (1989 Aug) *A Study of Convergence Properties of Adaptive Algorithms For Robotic Systems*, Proceedings of the IEEE International Conference on Systems Engineering, Dayton OH. (CP,P)
- Repperger, D.W.** (1989 Aug) *The Use of Active Feedback Controller in Biomedical Systems*, Proceedings of the IEEE International Conference, Dayton OH. (CP,P)
- Repperger, D.W.** (1989) *Enhanced Performance Active Controllers*, Wright State University Department of Biomedical Engineering Invited Lecture, two 1-hr oral presentations for Purdue University Undergraduates, Graduates, and Faculty, Department of Electrical Engineering, Dayton OH. (P)
- Repperger, D.W.** (1990 May) *Performance Measures of Teleoperation Using an Exoskeleton Device*, Proceedings of the IEEE Conference on Robotics and Automation, Cincinnati OH, pp 552-557. (RJ)
- Repperger, D.W.** (1991 Jan) *Active Force Reflection Devices in Teleoperation*, IEEE Control Systems Magazine, pp 52-56. (RJ)
- Repperger, D.W.** (1991 May) *Enhanced Performance Active Controllers*, Proceedings of the National Aerospace and Electronics Conference (NAECON), Dayton OH, Tutorial Notes. (CP,P)
- Repperger, D.W.** (1991 Jun) *Management of Spasticity Via Electrically Operated Force Reflecting Sticks*, Proceedings of the RESNA National Meeting, Kansas City MO. (CP,P)
- Repperger, D.W.** (1991 Jul) *Management of Spasticity Via a Dual Axis Force Reflecting Stick Controller*, Veterans Administration Center, Dayton OH. (P)
- Repperger, D.W.** (1991 Nov) *Construction of a Dual Axis Force Reflection Stick and Test Station*, AL-TR-1992-0041. (TR)
- Repperger, D.W.** (1991 Dec) *Minimum Coriolis Algorithms for Motion Control*, Proceedings of the IEEE Conference on Decision and Control, Brighton, England. (CP,P)
- Repperger, D.W.** (1992 Jun) *Rehabilitation Issues and Man-Machine Systems*, Proceedings of the American Control Conference, Chicago IL. (CP,P)
- Repperger, D.W.** (1992 Jun) *Application of Singular Value Decomposition Methods for Optimization of Fixed Parameters Involving Resolved Rotational Motion Rate Control in a Motion Simulator*, Proceedings of the American Control Conference, Chicago IL. (CP,P)

Repperger, D.W. (1992 Sep) *Resolved Rotational Motion Control Methods with Minimum Coriolis Applied to Improve the Quality of Motion Fidelity in Ground Based Motion Simulators*, IEEE Conference on Control Applications, Dayton OH. (P)

Repperger, D.W. (1993 Mar) *Studies Relating Control Theory to Biomedical or Rehabilitation Engineering*, Seminars in Troy NY, Detroit MI, and Newark NJ. (CP,P)

Chelette, T.L. (1993 Oct) *Application of FUZZY LOGIC for the Neuromotor Disabled*, Proceedings of the IEEE Engineering in Medicine and Biology Society Conference, Boston MA. (CP,P)

Chelette, T.L. (1993 Oct) *Variable Impedance Hand Control for Spastic Operators, Robotics, Mechatronics, and Haptic Interfaces*, DSC Vol. 49, No. 1, pp 111-118. (J)

Chelette, T.L. (1993 Nov) *Variable Impedance Hand Control for Spastic Operators*, Proceedings of the American Society of Mechanical Engineers Meeting, New Orleans LA. (CP,P)

Repperger, D.W. (1994 Aug) *Identification of Membership Function Parameters with Empirical Data from a Biomedical Application*, Proceedings of the IEEE International Symposium on Intelligent Control, Dayton OH. (CP,P)

Repperger, D.W. (1994 Dec) *Design of a Controller to Enhance a Motion Simulator's Performance Based Upon Linear Acceleration Fidelity*, Proceedings of the IEEE Conference on Decision and Control, Lake Buena Vista FL. (CP,P)

Chelette, T.L. (1995 Mar) *Enhanced Metrics for Identification of Forearm Rehabilitation Improvement*, IEEE Transactions on Rehabilitation Engineering, Vol. 3, No. 1, pp 122-131. (RJ)

Repperger, D.W. (1995 Jun) *An Objective Metric to Evaluate Relative Measures of 'Machine Intelligence' Utilizing Human-Machine Synergy as a Baseline*, Proceedings of the American Control Conference, Seattle WA. (CP,P)

Repperger, D.W. (1995 Sep) *Biodynamic and Spasticity Reduction In Joystick Control Via Force Reflection*, AL/CF-TR-1995-0152. (TR)

Repperger, D.W. (1995 Oct) *Study of Spatially Induced 'Virtual Force' with an Information Performance*, IEEE Transactions on Systems, Man, and Cybernetics, Vol. 25, No. 10, pp 1392-1404. (RJ)

Chelette, T.L. (1995) *The Acceleration Time Constant: Comparison of Normal and Spastic Upper Extremity Movement*, IEEE EMBS Meeting, Boston MA, Oct 95. (CP,P)

Repperger, D.W. (1995 Dec) *A Study on the Reduction of Workless Forces in Mechanical Systems within a LQ Framework*, Proceedings of the 34th IEEE Conference on Decision and Control, New Orleans LA. (CP, P)

Repperger, D.W. (1995 Dec) *Performance Study Involving a Force Reflecting Joystick for Spastic Individuals Performing Two Types of Tracking Tasks*, Perceptual and Motor Skills, No. 81, pp 561-562. (RJ)

Chelette, T.L. (1996 Mar) *Pattern Recognition of Spastic Motion*, Proceedings of the Southern Biomedical Engineering Conference, Dayton OH. (CP)

Chelette, T.L. (1996) *Pattern Recognition of Spastic Motion*, Journal of Intelligent and Fuzzy Systems. Vol. 4, pp 141-160. (RJ)

Chelette, T.L. (1997) *The Acceleration -Velocity Relationship: Identification of Normal and Spastic Upper Extremity Movement*, Comp Biol Med, Vol. 27, No. 4, pp 309-328. (RJ)

Chelette, T.L. (1998) *The Assistive Effect of Force Reflection in the Forearm Response Parameter Permutation Plane*, Automedica, Apr 98, Vol. 16, pp 1-18. (RJ)

SITUATIONAL AWARENESS/Spatial Disorientation

Repperger, D.W. (1990 Apr) *Studies in Spatial Disorientation at Wright-Patterson AFB Using a Kalman Filter*, IEEE Miniconducto, Dayton OH. (TN)

Chelette, T.L. (1990 Jun) *A Spatial Disorientation Predictor Device to Enhance Pilot Situational Awareness Regarding Aircraft Attitude*, Space Operation, Application and Research Symposium, Albuquerque NM. NASA Conference Publication 3103. (CP,P)

Repperger, D. (1990 Aug) *A Spatial Disorientation Detector to Enhance a Pilot's Telepresence About Unknown Environments*, Proceedings of the IEEE Systems Engineering Conference, Pittsburgh PA. (CP,P)

Lyons, T. (1990 Oct) *Low-level Turning and Looking Mishaps*, Flying Safety Magazine, Vol. 46, No. 10, pp 2-5. (J)

Chelette, T.L. (1991 May) *The Use of a Tactile Device to Measure an Illusion*, Proceedings of the IEEE National Aerospace and Electronics Conference (NAECON), Dayton OH. (CP,P)

Chelette, T.L. (1991 Dec) *Development of a Tactile Perceived Attitude Transducer (TPAT)*, AL-SR-91-0002. (TR)

Chelette, T.L. (1991) *Developing a Technique for Measuring the G-Excess Illusion*, Test and Evaluation Technical Group Newsletter, Vol. 6(3), 2-6, Human Factors Society. (TN)

Albery, W.B. (1991) *Spatial Disorientation Research on the Dynamic Environment Simulator (DES)*, AAMRL-SR-90-513. DTIC No. AD-A241203. (TR)

Chelette, T. (1992 Dec) *The Nature of the G-Excess Illusion and its Effect on Spatial Orientation*, AL-TR-1992-0182. (TR)

Chelette, T.L. (1993 Apr) *The Use of Simulated 3-D Sound to Enhance Spatial Orientation*, Symposium on Spatial Disorientation in Helicopters and its Operational Consequences, Pensacola FL. (P)

Chelette, T.L. (1993 Oct) *Creation of a Virtual World to Study Human Spatial Perception during Sustained Acceleration*, AGARD AMP Symposium, Lisbon, Portugal. (CP,P)

Martin, E. (1993) *Emulation of Space Motion Sickness (SMS) on the Dynamic Environment Simulator Centrifuge*, AL/CF-TR-1993-0007. DTIC No. AD-A289689. (TR)

Repperger, D.W. (1994 Oct) *High Angle of Attack Situational Awareness Problems Including Pilot Induced Oscillation*, Proceedings of the Workshop on Human Factors/Future Combat Aircraft, Ottobrunn, Germany. (CP,P)

Albery, W. (1994 Oct) *Development of Space Motion Sickness in a Ground-Based Human Centrifuge for Human Factors Research*, Paper IAF/IAA-94-G.3.149, Proceedings of the International Astronautical Federation Congress, Jerusalem, Israel. (CP,P)

Chelette, T. (1995 Jan) *The Effect of Head Tilt on Perception of Self-Orientation While in a Greater Than One G Environment*, Journal of Vestibular Research, Vol. 5, No. 1, pp 1-17. (RJ)

Chelette, T.L. (1995 May) *Visual Perception of Eye Level (VPEL) Under High G While Viewing a Pitched Visual Field*, Aerospace Medical Association Meeting, Anaheim CA. (A,P)

McCarthy, G. (1995 May) *Fatal Attractions - A Review of Illusions*, Aerospace Medical Association Meeting, Anaheim CA. (P)

Albery, W.B. (1995 Jun) *The Vestibular Organs and Spatial Disorientation*, FAA Seminar, Medical Aspects of Aircraft Accident Investigation, Oklahoma City OK. (P)

Albery, W. (1996 Oct) *Development of Space Motion Sickness in a Ground-Based Human Centrifuge*, Acta Astronautica, Vol. 38, No. 9, pp 119-126. (RJ)

Barfield, F. (1999 Dec) *GCAS: A System for Eliminating Class A Mishaps Due to GLOC, SD & Loss of SA*, Proceedings of the SAFE Symposium, Atlanta GA. (CP, P)

Albery, W. (2000) *SD Operations & Training -- Ground-Based*, SD Workshop, 15-17 Nov 00, San Antonio TX. (A,P)

HELMET MOUNTED SYSTEMS

Esken, R.L. (1991 Apr) *Test and Evaluation of the I-NIGHTS Night Vision Goggle Integrated Helmet System under Sustained Acceleration*, AGARD Aerospace Medical Panel, Pensacola FL. (CP,P)

McCloskey, K. (1991 May) *Results and Implications of the I-NIGHTS NVG Test Structure*, Proceedings of the 5th Interservice/Industry Acceleration Colloquium, Dayton OH. (CP,P)

McCloskey, K. (1991 Sep) *Methods for Test and Evaluation of Night Vision Goggle Integrated Helmets*, Proceedings of the Human Factors Society Meeting, San Francisco CA. (CP,P)

Chelette, T.L. (1991 Nov) *Augmented and Advanced Helmets in a Sustained Acceleration Environment*, Proceedings of the SAFE Symposium, Las Vegas NV. (CP,P)

McCloskey, K. (1995 Feb) *Evaluation of Integrated Night Vision Goggle (NVG) Helmets Under Sustained +Gz*, Aviation, Space, and Environmental Medicine, Vol. 66, pp 118-25. (RJ)

Esken, R. (1996 Oct) *Digitization of Helmet Rotation Under G Using Mock Helmet Loading*, Proceedings of the SAFE Symposium, Reno NV. (CP,P)

Eveland, E. (1999 Dec) *Helmet Weight and CG Effects on the Performance of Tracking Tasks During +Gz Acceleration*, Proceedings of the SAFE Symposium, Atlanta GA. (CP,P)

MISCELLANEOUS TOPICS

Repperger, D.W. (1991 Apr) *Technology Transfer and Issues in Biomedical Engineering*, IEEE Mini-Conductor, Dayton OH. (TN)

Tripp, L.D. (1992 May) *Desert Storm: An Aeromedical Technician's Perspective*, Aerospace Medical Association Meeting, Miami Beach FL. (A,P)

Tripp, L.D. (1992 May) *Research and Development: The Integration of Computer Based Medical Technology into the Aeromedical Evacuation System of the 21st Century*, Aerospace Medical Association Meeting, Miami Beach FL. (P)

Tripp, L.D. (1992 May) *The Use of Animals in Acceleration Research*, American Association of Laboratory Animal Science. (A,P)

Popper, S. (1992) *What is Ethical in Human Experimentation?*, Aviation, Space, and Environmental Medicine, Vol. 63, No. 5, pg. 71. (RJ)

Van Patten, R.E. (1993 Dec) *Biplanes that Fought the Battle of Britain*, Aviation Magazine. (UJ)

Popper, S.E. (1993) *Individual Differences and Subgroups Within Populations: The Shopping Bag Approach*, Aviation, Space, and Environmental Medicine 64:74-77. (RJ)

Smith, D. (1997 Oct) *Mathematical Model for the Simulation of Aircraft Maneuvers on a Ground-based Centrifuge using MATLAB*, MATLAB Conference, San Jose CA. (P)

Allnutt, R. (2000 May) *A Recapitulation of Harry G. Armstrong's "The Effect of Acceleration on the Living Organism,"* Aerospace Medical Association Meeting, Reno NV. (A,P)

Skowronski, V. (2000 May) *Major General Harry G. Armstrong: A Pioneer in Aeromedical Research*, Aerospace Medical Association Meeting, Reno NV. (A,P)